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ABSTRACT

This module on owning and operating an air conditioning and heating service is one of 36 in a series on entrepreneurship. The introduction tells the student what topics will be covered and suggests other modules to read in related occupations. Each unit includes student goals, a case study, and a discussion of the unit subject matter. Learning activities are divided into individual activities, discussion questions, and a group activity. Units (and subject matter) in this module are: planning your business (services, customers, competition; personal qualities; legal requirements); choosing a location (customers; competition; personal considerations; selecting a specific location); getting money to start (information needed to get a business loan; financial information); being in charge (tasks; selecting staff; keeping people happy); organizing the work (work orders; scheduling; time planning); setting prices (acceptable to customers; in line with competition; components of price; establishing a price); advertising and selling (customer needs; advertising and promotion; selling and customer relations); keeping financial records (importance of financial records; customer billing; daily cash sheet); and keeping your business successful (profit and personal satisfaction; profit/loss statement; how to increase profits). A summary and quiz complete the document. (A teacher's guide is available for this module.) (CT)

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Entrepreneurship Training Components

GETTING DOWN TO BUSINESS:

Air Conditioning and Heating Service

Module 36

CE031 105

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GETTING DOWN TO BUSINESS:

Air Conditioning and Heating Service

Barbara Sanderson

May 1981

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INTRODUCTION

How are you going to use your job skills after you finish school?

Have you ever thought about starting your own air conditioning and heating service?

This module describes people who have started and managed small air conditioning and heating services. It gives you an idea of what they do and some of the special skills they need.

You will read about

- planning an air conditioning and heating service
- choosing a location
- getting money to start
- being in charge
- organizing the work
- setting prices
- advertising and selling
- keeping financial records
- keeping your business successful

You will also have a chance to practice some of the things that air conditioning and heating service owners do.

Then you will have a better idea of whether a career as an air conditioning and heating service owner is for you.

Before you read this module, you might want to study Module 1, Getting Down to Business: What's It All About?

When you finish this module, you might want to read

- Module 29, Getting Down to Business: Energy Specialist Service;
- Module 33, Getting Down to Business: Construction Electrician Business;
- Module 35, Getting Down to Business: Plumbing Business.

These modules are related to other programs in trades and industry.

UNIT 1

Planning an Air Conditioning and Heating Service

Goal: To help you plan your air conditioning and heating service.

Objective 1: Describe the services, customers, and competition of an air conditioning and heating service.

Objective 2: List three personal qualities an owner of this business might have.

Objective 3: List three ways to help your business compete successfully.

Objective 4: List one or more special legal requirements for running an air conditioning and heating service.

WILLIS JONES THINKS ABOUT HIS OWN BUSINESS

Willis Jones wants to start his own air conditioning and heating service. Willis has known for several years that he wanted to go into business for himself. He says, "I wanted to get work experience and save some money so then I'd be ready to work on my own."

Willis completed a four-year apprenticeship program in sheet metal work. Then he worked for six years for a large air conditioning and heating service. He knew he had to take a test before he could set up his own business, so he took a state test that included questions on how to run a business.

Now Willis feels ready to work on his own. First, he is skilled at putting in and fixing air conditioners and heaters and knows he does good work. He has worked as a supervisor and knows that he is good in dealing with customers as well as directing other workers. He says of himself, "I've always been interested in the business side of this service--in figuring out how long things take to do and what they should cost. People have told me I have good business sense."

Willis has been working for a downtown business. He lives about 10 miles from there. He wants to start a business installing and fixing air conditioning and heating equipment near where he lives. There are several air conditioning and heating services in the area, but he thinks there is enough work for him, too.

Willis is excited about starting his own business and wants to do well. He knows a lot already, but he knows there is more for him to learn if he wants to have a successful business.

Planning an Air Conditioning and Heating Service

There are many, many small businesses in America. Small businesses can have as few as one worker (the owner) or as many as four workers. A small business owner is "self-employed." Often a whole family works together in a small business.

One out of seven air conditioning, refrigeration, and heating mechanics is self-employed. These materials can help you learn what is involved in being self-employed so you can decide if it is a long-term career goal you would like for yourself.

Willis Jones wanted to start his own air conditioning and heating service. As you work through these materials, you will see how his business develops. In this section, you will learn about four things involved in planning an air conditioning and heating service:

- deciding what the services, customers, and competition of your business will be;
- deciding what skills and qualities are needed to run this type of business;
- deciding what to do to compete well; and
- learning about the legal requirements for running this type of business.

Services, Customers, and Competition

An important step in planning is to decide what services you will offer, who your customers will be, and what the competition offers.

Services. Some businesses specialize in air conditioning or in heating. Some also provide plumbing services or other sheet metal work.

Others specialize in refrigeration. Many businesses provide both air conditioning and heating so they will have a more even work load over the year than if they offered only one service. Willis Jones wants to work on both air conditioning and heating systems.

There are several types of services that can be provided. One type of service is fixing, cleaning, and maintaining equipment people already have. A second type is adding onto, replacing, or installing new equipment. People often add air conditioning or replace a heating system. Sometimes they remodel and want to add onto an existing system. Another service that can be provided is putting air conditioning and heating in new buildings. An expanding service is changing systems in existing homes and buildings to make them more energy efficient.

Customers. Home owners will probably be your customers for repair and replacement of equipment. So will owners of small businesses such as restaurants or stores. Apartment owners also need these services. Factories need more complicated air conditioning and heating systems. General contractors who are building new homes and commercial properties may want to use your services for equipment installation.

Competition. There is competition in the air conditioning and heating business. Some companies are large and provide a wide range of services. Other businesses may specialize in one type of service, such as responding quickly to emergency calls or doing remodeling work. Some specialize in selling a certain brand of equipment. Each business offers a service it believes people need, want, and are willing to pay for.

Personal Qualities

Willis wants to know if he has the personal qualities that are needed to run his own business. He knows he has the necessary skills in his craft, and he learned about business laws for his license test. Below are personal qualities that he feels are important.

- Like people. He feels it is important to like dealing with both customers and employees.
- Be a good organizer and planner. He feels it is essential to be organized and to be able to plan his time and his work. He also knows it is important to pay attention to details.
- Have good business sense. He knows he must be aware of costs and decide how much to charge so he can make a profit and yet not charge more than his competition.
- Be good at problem solving. Customers will call him with a problem, and his job will be to help solve those problems.
- Be a hard worker. He knows it will take hard work to succeed and that he will probably work longer hours than at his old job.

How to Compete Successfully

There are several things you can do to compete successfully.

- Do a lot of research and planning before you start the business to help you decide what services to offer and where to offer those services. You should offer a service you think people want and will pay for.
- Offer special services that other businesses do not offer.
- Establish a business image that people will remember. You may want an image that is professional, yet friendly.

Legal Requirements

Contact your state licensing agency to learn the state laws for starting your business. Most states require that you have several years of experience, pass a state test, and demonstrate your financial reliability to qualify for a contractor's license. Once you have your contractor's license, then you can start your own business. You will usually need a city business license also. You will have to find out exactly what the legal requirements are in your local area.

Summary

Air conditioning and heating services repair, replace, and install equipment. They provide services to homes, apartments, small businesses, and industry. Starting a successful new business requires careful planning. The small business owner should be good at his or her trade and also good at running a business.

Learning Activities

Individual Activities

1. Look up "Air Conditioning" and "Heating" in the Yellow Pages of your phone book.
   a. Make a list of the services listed.
   b. Make a list of the customers mentioned.
   c. Make a list of several things that are mentioned to make a business stand out from its competition. For example, one ad might talk about a certain brand of equipment they use.

2. Do you have the right personality to run an air conditioning and heating service? Put a check by each trait you think you have.
   ____ Work well with people
   ____ Am organized
   ____ Am interested in business
   ____ Can solve problems
   ____ Willing to work long hours

3. Call your state licensing agency. Ask what the legal requirements are for running an air conditioning and heating service and what fees or bonds are required. (A bond is a guarantee that you will pay up to a certain amount of money in claims against you.) Make a list of the requirements and report to the class on what you learn.

Discussion Questions

1. What do you think are the advantages and disadvantages of running your own business as compared to working for someone else?

2. List users of air conditioning and heating services in your local area and typical services they might need, such as changing filters or replacing an air conditioning unit.

3. Do you think Willis Jones has a good background for starting his own business? Why or why not? Also list ways Willis can get more information to help him start his business.

Group Activity

List all the questions you can think of to ask the owner of an air conditioning and heating service. For example, "What services do you offer? What customers do you serve? What is your competition like? What knowledge or skills do you need to run your own business?" These are just a few questions to get you started. List at least 10 questions.

Then invite a person involved in an air conditioning and heating service to visit your class. You can ask the visitor to answer these questions. Try to give your guest the list of questions before he or she comes so the person will know what you are interested in.

To contact a person, see if anyone in your class or your teacher knows of someone you could ask. If not, contact your local trade association or call someone listed in the Yellow Pages.

UNIT 2

Choosing a Location

Goal: To help you choose a location for an air conditioning and heating service.

Objective 1: List three things to think about in deciding on a service area for your business.

Objective 2: Pick the best location for this business from three choices and explain your choice.

WILLIS DECIDES WHERE TO LOCATE

Willis lives in a suburb--Fairborn. About two-thirds of the houses are over 20 years old, and the rest are newer. Fairborn is an area where developers have plans to build more houses. But when Willis plans to start his business, there is not much new building being done. People are staying in their old houses and remodeling them rather than moving to new ones, because the price of houses is high.

Willis thinks Fairborn will be a good place to start a business. He says, "I like working near home. I have a lot of friends in the neighborhood, and I think they'll give me business. I'll start by doing repairs and then do replacements and remodeling for the older houses."

The next step was for Willis to find out about the competition. He knew there was one large, established air conditioning and heating business. He talked to friends and found out that this company specialized in new construction and large commercial jobs, so it would not be in direct competition with him. Willis also learned that there were three smaller businesses, most of which had plenty of work. Willis thought he could provide as good a service--or better--as they could and that there was room for him in Fairborn.

Where to locate his business was his next concern. He went with a realtor to look at commercial areas for a shop to rent. He found that what he wanted was too expensive for him to afford. He decided to work out of his home for a while until he got started. He picked out two areas where he would like a shop and told the realtor to call him if a space became available in the next six months to a year.

Choosing a Location

There are several things to think about when you choose a location for your business. First you need to decide what area to service. You should consider these factors.

- Are there enough customers in this area?
- What is the competition?
- Is this where I want to work?

You will also need to decide on a specific location for your shop and office. These are things to think about.

- Is there enough space?
- Can I afford the rent?
- Is the building in good condition?
- Is the location convenient?

Customers

It is important to know about types of houses, the income level of the residents, and growth patterns in the town before deciding where to locate and what services to provide. You can get some of this information from trade magazines and business publications. Older homes generally need more repair, replacement, and remodeling work. An area where new houses or businesses are being built is a good location to do new construction work. Houses in a higher economic area may have more air conditioning equipment or more need for remodeling or replacing systems than an area of lower-cost housing. Repair work tends to be more steady than new construction, which varies with the availability of money to finance building and with other factors. Willis thought Fairborn would be a good place for his service because he specialized in repair and over two-thirds of the houses were over 20 years old.

Competition

You must also consider the other businesses in the area that provide services similar to yours. You can find out how many there are by looking at the Yellow Pages. You should consider the size of your competition. A person working alone or a small business would not provide the same competition as a large operation. Also consider what services they provide. Perhaps you are offering a new or better service. There are a number of things to learn about the competition. Talking to other people in the trades is a good way to find out about these things.

Balance between Customers and Competition

What is important is the number of customers in relationship to the people offering the service. Willis found that there were several air conditioning and heating businesses, but he felt there was enough customer demand in Fairborn to support him.

Personal Considerations

There are other things to consider about the location. You might ask, "Is this where I want to work? Is this where I want to start a business?" People often have personal reasons, such as friends or family, for deciding where to start their businesses. Willis wanted to work closer to his home, which was a major reason he selected Fairborn.

Selecting a Specific Location

Sometimes a mechanic can start a small air conditioning and heating service by working out of his or her home--if that is legal in the local area. The mechanic may hire an answering service to take calls. He or she can use space in his or her home for an office and use the garage for storage. This offers an inexpensive and convenient way to operate a small

business. However, the lack of a shop would limit some of the work you could do. Some people like more separation between their work and home life and prefer a place they can go to for work. Willis decided to work out of his home until he built up his business enough to rent office space.

A larger operation would include a shop, storage area, a garage for trucks, and an office. The business would be located in an area zoned for commercial or industrial use. Customers would not usually come to the office; rather, you would go to their homes or businesses to talk with them and do the work. The building should be clean and in good condition. Also, it is important that your location be close to the customers you want to serve, or a lot of time and expense may be spent in travel. Willis found two facilities in Fairborn where he would like to locate. He has to weigh the advantages of having a shop and office against the expense of renting the space.

Summary

In choosing your location, you must decide if there is enough demand in the area to support a new air conditioning and heating service. In selecting a specific office, you must decide how much you can afford and if the space, location, and condition of the building meet your needs.

Learning Activities

Individual Activities

1. List five things to think about in picking an area to start an air conditioning and heating service.

2. Look up "Air Conditioning" and "Heating" in the Yellow Pages of your local phone book. Count the number of businesses listed. Select one business you think might be a large company and one you think might be small. Write down your reason why.

3. Look up the addresses of three air conditioning and heating businesses in the Yellow Pages of the phone book. Find them on the map. Try to drive by one or more of the businesses to see where they are located. If appropriate, stop and ask if you can look at their facilities. Describe the locations and buildings.

4. Get a map of your community. Locate two places you think might be appropriate for an air conditioning and heating service and list your reasons.

5. Look in the classified section of the newspaper under "Lease or Rent - Industrial Facilities." What is the range in price per square foot of space? Make a list of features mentioned that you think would be desirable for an air conditioning and heating service.

Discussion Questions

1. Describe your own community and how much of a need there is for air conditioning and heating services. Do you think it would be wise to start one in your community? What services would you offer?

2. Which of these locations seems best for starting an air conditioning and heating business? Discuss.
   - A small town serving a farm area in Ohio. Most of the homes are old. There is one long-established air conditioning and heating service with a good reputation in the community.
   - A medium-sized town in Ohio that has several industrial plants. There is a new plant being planned, and new home construction is increasing. There are four air conditioning and heating businesses in town.

3. Willis decided to rent space. He wants about 1,500 square feet. He will only use 1,500 square feet now but wants room for expansion. He saw these two listings to choose from. Which do you think he should choose? Why? What other information might he want to help him make a decision?

   a. Bargain Industrial Space
   25¢/sq. ft. 2,500 sq. ft.
   $625/month
   garage and shop

   b. Near Freeway
   40¢/sq. ft. 1,000 sq. ft.
   $400/month
   Small office; garage and shop
   restrooms

Group Activity

1. Suppose you own an air conditioning and heating service that does repair, maintenance, and remodeling work. List five factors you think are important in picking an area to serve. As a group, rank these factors in order of importance.

2. Now suppose you own an air conditioning and heating service that does new construction. List five factors you think are important in picking an area for this business. As a group, rank these factors in order of importance.

3. Compare your two lists. How are they different?

UNIT 3

Getting Money to Start

Goal: To help you plan how to get money to start an air conditioning and heating service.

Objective 1: Write a business description for an air conditioning and heating service.

Objective 2: Fill out a form showing how much money you need to borrow to start your air conditioning and heating service.

WILLIS PREPARES A BUSINESS PLAN

As Willis started his business, he learned about planning and budgeting. He talked to an accountant to set up a system for keeping records and preparing financial statements. To start his business Willis planned to spend the following amounts of money in the first three months:

Uses of Cash--First Three Months

Equip and paint truck	$ 3,500
Parts and supplies inventory	3,000
Office equipment	1,000
Advertising	500
Other	1,500
Cash fund	1,500
Total	$11,000

This did not include the living expenses Willis would have the first three months. The "Other" category included his license fee, insurance, phone, gas, maintenance of equipment, and other expenses. The cash fund would allow for unexpected expenses and other costs he would have before getting paid, such as buying a special part.

Willis had $7,000 to invest in the business. Willis decided to ask a bank for a loan of $4,000. He would have to pay interest on the bank loan and didn't want to borrow more than he needed. He prepared a packet of information to present to the bank loan officer. It included personal information about Willis, facts about his business, and financial information. His accountant helped Willis prepare the various financial statements. Willis offered his house as collateral--to guarantee that he would pay the loan back.

Willis showed his business plan to his uncle to get his suggestions. His uncle was impressed with the plan and offered to lend him the money he needed for two years with no interest. Then Willis' sources of cash were:

Sources of Cash

Cash on Hand	$ 7,000
Loan from Uncle	4,000
Total	$11,000

Willis said, "Great! I can get started without having to borrow money from the bank. After I build up my business and am ready to expand, I can borrow the money I need then."

Getting Money to Start

Starting a new business requires money. How much money depends on how large an operation you want to have and the kind of work you plan to do. In this section you will learn something about how to get money to start an air conditioning and heating service.

Sources of money are:

- the owner's money;
- gifts, loans, and investments; and
- banks and credit unions.

Willis used his own money and borrowed money from his uncle. In getting ready to apply for a bank loan, he wrote down lots of information, including the following:

- personal background information;
- a description of the business; and
- financial information.

Information Needed to Get a Business Loan

Personal background information. This section includes schooling, work experience, and financial history. Someone who has paid his or her bills in the past would have an easier time getting a loan than someone who has been late or has not paid bills. The loan officer also wants to know if the person has the skills and knowledge necessary to run a business of this type.

Business description. The business description should be written clearly and simply and should explain your plans for your business. It should tell the lender the following:

- the kind (and name) of the business;
- the services to be provided;
- the location of the business and why you selected it;
- the kind of customers you will serve;
- the kind of competition you will have and why you think you can compete;
- your expected growth; and
- your hiring plans.

Financial Information

The lender will require detailed financial information. The banker wants to support a profitable business. However, the banker does not want to lend money to someone who may not be able to pay it back. The loan officer wants to know that you have planned ahead so that you know how much money you will need and have a good estimate of how much money you will have left over after paying your costs.

A new business will usually have expenses in the beginning before the owner has provided services or collected money. These are called start-up expenses. In the beginning, a business will usually spend more than it makes and will need money to support getting started. As the business gets established, it will want to collect more money than it spends; it will use some of the difference to pay back any money that was borrowed.

Typical start-up costs for an air conditioning and heating service may include money for: trucks, equipment, tools, an inventory of parts, office furniture, a typewriter, rent deposit, etc.

There will also be ongoing expenses, such as: salaries, rent, maintenance, supplies, gas, advertising, insurance, utilities, accountant services, license fees, etc.

Willis decided to begin his business small and keep his start-up costs low. He used a truck he owned and repainted it. He bought what he

thought was a minimum of tools, equipment, and parts he needed to provide good service.

The type of work a business does is also important in determining how much money you need. If you do small repair jobs, you may get paid when you do the work and will not need to buy expensive parts ahead of time. However, to do large jobs you have to pay for parts ahead of time, and you may not get full payment until well after the job is complete. So a business doing large jobs needs more money in reserve to work with.

You should also have extra money available to allow for slow times, delay in payment of customers' bills, and unexpected expenses. Willis kept a cash reserve to allow for this.

After you know what your expenses will be and how much you have to invest, you should fill out a statement of financial need (see page 28).

Summary

Starting an air conditioning and heating service requires money. Your start-up costs may be more than you have in your savings. You may need to borrow money. Give the bank information about yourself, your business plans, and your finances to show that you are capable and organized and have planned carefully. A good business description will also help you make decisions and set clear goals for your business.

Learning Activities

Individual Activities

1. List the three types of information you should give the bank when applying for a loan.

2. Below is a sample of a short business description that Willis Jones wrote to request a bank loan to expand his business. Suggest three improvements.

> I operate Jones Air Conditioning and Heating. I provide repair and installation service in the Fairborn area. I selected Fairborn because it is a growing community. Also, it has many older homes that are good customers for repair and replacement work. The existing companies have more work than they can do.
>
> I have been in business on my own for one year. My revenues have been $75,000 during this period. I spent $45,000 on business expenses, took $20,000 in salary, and have $10,000 for expanding. I would like a $10,000 loan.

3. Make a list of 10 expenses of an air conditioning and heating service.

4. Fill in the blank spaces on the form below.

STATEMENT OF FINANCIAL NEED

Starting Expenses (for three months)		Money on Hand	
Salaries	$ 2,000		
Building and Property	1,000	Cash on Hand	$ 4,000
Repairs and Renovations	1,000	Gifts or Personal Loans	0
Equipment and Furniture	500	Investment by Others	0
Inventory or Supplies	500	TOTAL	$ 4,000
Advertising	500		
Other	1,500		
TOTAL	$ 7,000		

TOTAL STARTING EXPENSES	
TOTAL MONEY ON HAND	
TOTAL LOAN MONEY NEEDED	

Discussion Questions

1. Start-up costs for an air conditioning and heating service can vary. What are the advantages of starting out small? What are the advantages of starting out big? Which would you want to do?

2. Would you lend money to Willis Jones for his air conditioning and heating service? If so, what conditions would you put on the loan?

3. When Willis started his business, he needed to decide how much to spend on tools and parts to carry in his truck. At first he bought only the bare minimum. After two months he decided to double the amount of tools and inventory he carried. Why might he have decided to increase the tools and parts in the truck?

Group Activity

Do a role-play situation. Have one person play the role of Willis Jones and another person play the loan officer. The person playing Willis asks for a $10,000 loan to expand his or her business. Do the role play for five minutes. Have each person share how it felt to play that role. Then change roles, and have two different people act out the same situation. See what different people do in a similar situation.

Before starting the role play, discuss what you would wear when going to talk to a bank loan officer.

UNIT 4

Being in Charge

Goal: To help you select and manage the people with whom you work.

Objective 1: Decide how to divide the work of your service among several employees.

Objective 2: Pick the best person for a specific job in your company.

Objective 3: List three ways to keep your people happy.

WILLIS HIRES EMPLOYEES

Willis has been in business over a year now. He has built up a base of customers and has more work than he can do himself. He borrowed money from a bank, rented an office and shop, and is now ready to hire some help. He wants to spend more time managing the business but will continue to do some of the work himself.

Willis wants to hire two people. He says, "I want people who are well trained and experienced in repair work. They should be people who can deal well with customers. Customers should feel comfortable about letting them into their homes."

Willis is a member of the sheet metal workers' union, and he wants to hire through the union. He requests two mechanics who have a background in repair work. The union sends two mechanics. Willis interviews and hires them. Now he has two employees, James and Hank.

There is another area in which Willis wants help. He wants someone to work half time in the office answering phones, keeping the records, doing bookkeeping, and typing. He calls the placement center at the local community college. Two people apply, and he hires the one who seems best suited for the job.

Willis says, "With this help, I know I can build a good business!"

Being in Charge

Owning your own air conditioning and heating service may involve hiring and supervising other people. This unit will discuss:

- tasks in an air conditioning and heating service and the skills needed to do them;
- hiring staff; and
- keeping employees happy.

Tasks

Here are some typical tasks in running an air conditioning and heating service along with the background required for each type of task.

1. Managing--organizing the work, scheduling, making decisions, training and supervising employees, organizing financial information, planning customer relations, promoting the business, handling business details, purchasing, getting permits, staying current on codes, etc.
   Background--technical knowledge about air conditioning and heating, experience in supervising others, and business skills.
2. Estimating--making estimates of how much a job will cost, and talking to customers about what they want and how much they will pay.
   Background--knowledge of how long tasks take and prices for required parts, and skill in dealing with customers.
3. Repair work--diagnosing the cause of problems, and looking for defects.
   Background--ability to trouble-shoot, and training and experience in repair work.
4. Replacement, remodeling--replacing existing equipment or systems, or adding on to an existing system.
   Background--basic training and experience in this work.

5. New construction--installing systems in homes and commercial buildings as they are being built.
   Background--experience in new construction, including specialization and supervisory responsibilities.
6. Office work--typing, simple bookkeeping, filing, recordkeeping, and answering the telephone.
   Background--basic typing classes or work experience.

In the case of Willis Jones, he planned on doing mainly the managing and the estimating. He hired two skilled mechanics who could do repair and replacement work; he also hired someone to manage the office.

Selecting Staff

Good staff are important to the success of a business. To select a good employee, you should identify the tasks that need to be done and recruit an employee who can do each task.

The best way to recruit depends on your local area. Some sources of new employees are:

- unions and trade associations;
- suggestions of friends;
- schools and training programs;
- the U.S. Employment Office; and
- want ads in local newspapers.

Some employers hire through the union. They tell the union how many workers they need, any special skills required, and whether they want a journeyman or apprentice. The union will then send a worker from its list of available people. The employer can recall a former worker or occasionally be able to request a specific person. The minimum wages and benefits are determined by the union. The employer who hires through the union knows that the worker has met certain skill requirements. Hiring through the union is a good way to get extra help when there is a heavy work load. It is important to check with the local union on its policies and contractual obligations.

Other employers hire non-union workers. Often they can pay the employee a lower wage than if they hired a union member. However, they may find it difficult to find well trained non-union people. Also, non-union mechanics will probably not be able to work on jobs that hire other union workers.

To hire office help, you should write a job description and advertise the position in the newspaper. You will want applicants to fill out an application and have a personal interview. You should look for someone who has the skills required, is reliable, and wants to do the job.

Keeping People Happy

Once you've hired your staff, it's important to keep them happy so they will do quality work and continue on the job. Some of the ways to do this include having:

- good pay and benefits;
- clear policies;
- clear directions;
- training; and
- good personal relations.

Pay. The pay and benefits you give your employees should be close to what they would get working for someone else. If you pay less, they may get a job elsewhere. If you pay much more, you may not be able to keep your prices low enough to be competitive. If you are a union shop, the pay may already be set, and you will pay at least the union rate. A bonus for work well done or other money incentives can motivate your employees.

Clear policies. You should be aware of labor laws regarding pay, overtime, and other work conditions and follow them. You should be clear about what your policies are and communicate them to your employees. For example, you may want your employees to work overtime during the peak work months in the spring and fall. If you are offering emergency repair service, you will need to find someone willing to work evenings and weekends.

Make policies about these things in advance and communicate your policies to your employees. Don't wait for problems to come up first.

Clear directions. The clearer you can be about what you expect, the more likely your workers will be to please you. Some things you will want done a certain way. Your employees aren't mind readers, so be clear about what you want. Sometimes you will want employees to use their own judgment. Then you should support your employees' decisions and let them know if you want things changed in the future.

Training. You should give your staff training when needed. When you hire people, start out by supervising them closely and checking their work. Then you can give them more independence and assign them to jobs that are at their skill level. You can teach employees new skills, too. You can also encourage employees to take available training classes to learn new skills and to keep current on new developments in your field. For example, training in solar energy and electrical work can be helpful.

Good personal relations. As the owner, you should talk with your employees often. Learn what concerns they have about their work. Reward work that is well done. Your attitude as the owner sets the tone of the business. If you are positive, productive, and fair, you can create the kind of company that people will want to work for. If you are unorganized, inconsistent, critical, or lax in supervision, you can make your employees unhappy.

Summary

There are many tasks involved in an air conditioning and heating service. The owner should be clear about what the tasks are and should select the right people to do them. The way the owner manages staff is very important in setting the atmosphere of the business.

Learning Activities

Individual Activities

1. Below is a list of tasks performed in a small air conditioning and heating service. Match each task with the person best suited for the job.

_____	1. Type a bid	a.	Owner
_____	2. Prepare a big estimate	b.	Journeyman
_____	3. Hire a new employee	c.	Office worker
_____	4. Go out on a repair call		

2. Call your local sheet metal workers' union. Find out how to join the union and how jobs are assigned. Also ask what the pay scale is for both an apprentice and a journeyman. Report your findings to the class. Perhaps you could invite a representative of the union or the apprenticeship program to visit the class.

3. Look in your local newspaper to see if there are any jobs listed for an air conditioning and heating mechanic. Bring in any examples of job listings you find and share them with the class.

4. Based on the information below, which of these workers would you send out alone on a repair job?

   ___ a. Apprentice

   ___ b. Journeyman, two years' experience, has worked for the company for two years

   ___ c. Journeyman, five years' experience, has worked for the company for one week

5. List three ways to keep employees happy.

Discussion Questions

1. Most air conditioning and heating mechanics are men. The U.S. Department of Labor now has goals and timetables for having more women and minorities trained in this field. As an owner, would you be willing to hire a female mechanic? Why, or why not?

2. Some people like being a foreman, while other people don't. What would you like about being a foreman? What wouldn't you like?

3. Which of these "help wanted" ads do you think is best? Why?

Air Conditioning	Air Conditioning
Experienced only. Top pay. 297-8134	Journeyman level. Install, maintain, and repair equipment. 532-1648

Group Activity

Willis is having a problem with Hank. The work Hank does is very good, but he often comes in late in the morning, which makes planning the day difficult. How should Willis handle this situation?

UNIT 5

Organizing the Work

Goal: To help you learn how to keep track of the work of your air conditioning and heating service.

Objective 1: List what needs to be done for one of your customers on a work order form.

Objective 2: Given several tasks to do on a particular day, write a work schedule for yourself or an employee.

WILLIS GETS ORGANIZED

Willis now has two mechanics working for him. He must plan not only how to spend his own time, but also how to delegate work and supervise others. He says, "I need to plan ahead to decide in what order to do the work and who should do it."

He uses a work order form to help him organize the work. At first he bought some standard forms and used a stamp to put his name on them. After using the forms for a while, he decided what features he liked about them and what he didn't like. Then he selected a work order form that he liked and had it printed with his name on it.

When Willis first began to delegate work to Hank and James, there were a few misunderstandings. Willis found he needed to be very specific so they would know exactly what he wanted done. He also found that Hank and James did not get jobs done as quickly as he did. He needed to allow more time in his estimates. In the beginning, too, there was some confusion about what work would be done when. They developed a work schedule card to solve this problem. They also set up a system for getting in touch with each other during the day.

The biggest problem Willis had was managing his own time. There were constant interruptions, and he spent much of his time on the telephone. He felt he wasn't spending enough time on managing the finances and making careful estimates. He decided to plan his schedule so he would have two hours a day of uninterrupted time to do paperwork. He also grouped his telephone calls and made them during one part of the day. He delegated much of the ordering of parts to Hank and also decided to train him to do some estimates. Willis said, "It will take time to do the training but in the long run it will save time." After making these changes, Willis felt he was more effective; he had more time to relax at home with his family and do other activities he enjoyed.

Organizing the Work

In running an air conditioning and heating service, you must organize the work, do the work, and make sure that the customer is satisfied. It is important to let your workers know what needs to be done, when it must be done, and who will do it. Any system should allow for making changes when needed. For example, you may need to stop work on one job because needed parts are not available.

The Work Order

The work order is used to record the customer's order and to note which workers will do the work. For large jobs, you should look at the work you have to do, make a detailed estimate, and prepare a work order. Work orders should be filled out carefully, and both you and the owner should agree with what is written down. This will help avoid later misunderstandings about what is to be done for how much. Always give the customer a copy of the form for his or her records.

For small jobs--such as service work or small repair jobs--work orders are not as important. In these cases you may fill them out over the phone or even after the job is finished. Here is a sample work order.

WORK ORDER

FROM: Jones Air Conditioning and Heating
704 Industrial Way
Fairborn, Ohio 45408

JOB FOR: Harriet Jackson
3712 Capital Road
Fairborn, Ohio 45408

DATE: 4/7/80
WORK ORDER NUMBER: 507
ORDER TAKEN BY: Willis Jones
START WORK ON: 4/10/80
TERMS OF PAYMENT: Cash on completion

Person Doing Work	Description of Work	Materials		Labor		Total Cost	
Hank, James	Install window air conditioning unit-- Air-Cool #821 (4 hrs at $30/hour)	475	00	120	00		

WORK STARTED: 4/10/80
WORK FINISHED: 4/12/80
Customer's Signature Harriet Jackson

TOTAL MATERIALS	475	00
TOTAL LABOR	120	00
TAX (5%)	23	75
TOTAL COST	$618	75

A contract is used for larger jobs, such as in new construction. A contract includes the names of the people involved, what services will be provided, when the job will be completed, how much it will cost, and how it will be paid for. Sometimes the customer pays when the job is complete, and sometimes he or she pays in installments as stages of the work are completed. A clear contract is important for the protection of all parties.

Scheduling

Someone must plan the work to decide in what order the tasks should be done and who should do them. There are a number of things to consider in organizing the work. For example, you will want to know how quickly you need to finish the work. You should try to fix a furnace that won't light before doing a routine maintenance call. A close estimate of how

long a job will take is important. You must also know the skills of each worker so a particular worker will be available to do the work he or she specializes in. Planning for the ordering and delivery of parts is important, as is grouping together jobs in the same part of town. In new construction you must coordinate your timing with other contractors. You should also be flexible and allow for the unexpected, such as an emergency equipment repair call from a good customer. As much as possible, try to keep appointments and do the work as scheduled. If there is a change in the schedule, call the customer first and tell him or her of last-minute changes.

Below is a sample work schedule for one day. Willis listed the name of each employee, the work to be done, and the order in which it should be completed. He referred to jobs by their work order numbers. On this particular day, Hank and James worked together on the first job.

WORK SCHEDULE

Date: Monday, April 6

Employee	Description of Job
Hank	#104, #101, #105
James	#104, start Campbell job (#100)

Each worker may also receive a written work schedule for the day.

Often the person doing the scheduling will want to communicate with employees during the day. This can be done by having them return to the office after each job, having them call in during the day, having a wireless paging system, or even having a radio communication system.

Time Planning

Most small business owners tend to work long hours, especially when they start the business. They often have problems planning their time.

One way to improve your use of time is to list all the things you want to do. Then rank them in order of importance and fill out a written schedule. Make reasonable time estimates and allow time for the unexpected. Include time for doing things you enjoy--it makes it easier to stick to your schedule. As you make up your written schedule, you may find that you must make choices and realize that some things just won't get done. At that point, you may need to talk to certain people and change agreements on getting some things done.

By planning how he spent his time and by making some changes, Willis became more effective at work and could enjoy his non-work time more. By delegating some of the work, he had more time for managing.

Summary

An air conditioning and heating service needs a system for recording work orders and scheduling the work. Careful planning and good communication are important for a smooth operation.

Learning Activities

Individual Activities

1. List five things you would find on a work order.

2. Delia Jackson replaced a thermostat. It took her one hour at $28.00 per hour labor and $30.00 in parts. Fill out the form below using this information.

WORK ORDER			
Person Doing Work	Description of Work	Materials	Labor
		Total Materials	____
		Total Labor	____
		Tax (5% on Materials)	____
		Total Cost	____

3. List three things you would find on a work schedule.

4. James has three jobs to do on Tuesday, March 4, in this order: work orders #81, #76, and #82. Fill out the form below using this information.

WORK SCHEDULE Date: _____	
Employee	Description of Job

5. How many copies would you want of a work order? Why?

Discussion Questions

1. Bring in several examples of work order forms. Perhaps your parents have examples of work order forms in their home records or use work orders on their jobs. Compare the forms. Select the one you like best and explain why. Which one seems easiest to use? Which one seems most professional? Which ones seem appropriate for big jobs? Which ones are adequate for small jobs?

2. What problems might occur if you did not use a work order form but just told your employees what jobs to do?

3. Given these jobs, how would you schedule them in a day? (Times include travel time.)
   a. Rush job--furnace repair--don't know how long it will take
   b. Rush job--light pilot--1 hour
   c. Routine maintenance call--near job a, 1 hour
   d. Replace electric wall unit--in another part of town--not a rush, but as soon as possible--3 hours

Group Activity

Make a list of the tasks that Willis might have to do in a day. Number them in order of urgency--that is, which tasks should be done first, second, and so forth. Then make up a schedule for Willis. If you decide there are too many tasks for him to do in one day, suggest how and when the remaining things should be done. Also discuss which items would have the most long-term benefit.

UNIT 6

Setting Prices

Goal: To help you decide how to set prices for your air conditioning and heating service.

Objective 1: Pick the best price for one of the services of this business.

WILLIS DECIDES HOW MUCH TO CHARGE

When Willis began his business in Fairborn, he called other air conditioning and heating services and asked what rates they charged for repair work. They all charged for materials and also charged an hourly rate that included salaries, other expenses, and profit. One charged $38 per hour, two charged $35 per hour, and one charged $30 per hour. Since Willis wanted to attract customers and his expenses were low, he started out charging $32 per hour.

When Willis hired two mechanics to work for him, he re-evaluated his pricing policy. He said, "Now that I have a reputation for good work, I think I can increase my prices without losing customers. Also, I have more expenses to cover now that I have a building and employees." He decided to charge $34 per hour and to increase his price again in six months to $36 per hour.

Willis did not use an hourly rate to charge for major replacement and remodeling jobs. For these jobs he visited the home or business and made an estimate of how long it would take to do the work; he also found out how much parts would cost. From this information he wrote up a bid or proposal of a flat amount he would charge the customer. Willis lost several hundred dollars on one job because it was more complicated than he thought it would be. He said, "I got burned on that job! Now I spend more time on my estimates and am more careful. The more estimates I do, the closer I come to bidding an amount that equals my actual costs."

Setting Prices

To be successful, you must set prices that:

- are acceptable to your customers;
- are competitive with similar services; and
- cover costs for materials, operating expenses, and profit.

This unit discusses what to consider in setting prices.

Acceptable to Customers

Your prices must be acceptable to your customers. Repair work will probably keep coming in with price changes. However, more people will do repairs themselves if your prices get too high, and this could reduce your business. For remodeling and replacement work, people may not have the work done if they feel the price is too high. Be aware of what people are willing to pay, and charge accordingly.

In Line with the Competition

Customers often check the prices of several services before deciding whom they want to do the work. Customers will not be willing to pay higher prices unless there are extra advantages for them, such as higher quality or greater reliability.

Components of Price

Cost of materials. The costs of the air conditioning and heating units you install and all materials and parts you use are one component of the price. An owner can keep the cost of materials low by shopping

for the best price, buying in quantity, and paying in cash. The owner must also consider quality. An inexpensive part may be more costly in the long run if it is unreliable. The cost for materials you "resell" to the customer is called cost of goods sold.

Operating expenses. Operating expenses include salaries and employee benefits, repairs and depreciation on equipment, office expenses, transportation costs, and all the other expenses related to operating a business. The owner thinks of all these expenses before deciding what to charge for a service.

Profit. The profit is what is left over after all expenses have been paid. The profit includes the owner's salary, money to pay taxes, and money to improve the business. You must decide how much profit you can make and whether this is acceptable for you. Many small businesses start out with little or no profit in the first few years.

Establishing a Price

In the air conditioning and heating business, the customer must be given an estimated price ahead of time and must agree on it before the work begins. For repair work, it is common to set prices based on the cost of materials plus an hourly labor rate for the time involved. (Sometimes the time is calculated to include travel time, and sometimes it is just time on the job. Sometimes there is a minimum charge.) The charge for materials includes the cost of the materials, a "markup," and tax. The labor rate includes salaries, benefits, operating expenses, and profit. Only about half of the money listed under labor is actually paid to the employee in salary.

In some cases, an air conditioning and heating service will have a fixed price for specific repair jobs rather than charging for actual time. Maintenance work may be done at a prearranged contract price (such as $100 per month). This will vary with the terms of the maintenance agreement.

On large jobs, you will often give a fixed-price estimate in advance. You will visit the job site, find out what the customer wants, and prepare a cost estimate. Then the customer decides if he or she wants to have the work done. If you "bid" too low, you may not make a profit; if you bid too high, you may not get the job. It is fairly difficult to estimate large jobs, but there are manuals and forms available that help you figure out costs. If your costs to complete a job are more than you expected, you usually cannot raise your price. However, if the customer requests changes, you can negotiate on the changes.

There are a number of things to consider in making an estimate.

- The job may lead to other work. In that case, you may want to accept a lower profit than usual.
- It takes time to prepare an estimate. You may not want to spend your time that way, especially if you don't think there is much profit in the job, or if there is a lot of competition and you don't think you have a good chance at getting the job.
- Prices for parts may change. Often a bid will say the price is good for only a few months as a protection against increased prices.
- Your price can vary widely depending on the quality of the equipment you install.

In planning the work and making an estimate, you must be sensitive to what customers want and to how much they will pay. Often your service will cost more than they expect. You will need to educate customers on what options are available and what the advantages and disadvantages are of each choice. Then they will have a clearer idea of what they can get for their money.

Willis figured that his expenses on a certain job would be the following.

Materials		$3,000
Operating Expenses		2,000
	TOTAL	$5,000

If Willis asked the customer for $5,000, he would "break even," or make enough money to pay for expenses. To make a profit, he'd have to raise his price. His estimate to the customer might be $5,750.

Materials & Operating Expenses	$5,000
Profit (15% of total cost)	750
Proposed Price	$5,750

Summary

Setting prices depends on customer demand, the prices of the competition, cost of materials, labor and other operating expenses, and the amount of profit desired. You and the customer should agree on the price of each job ahead of time. Prices can be set based on actual costs of materials and labor, fixed price bids, or pre-established monthly rates.

Learning Activities

Individual Activities

1. List five things included in the hourly labor rate.

2. A job will cost the owner $40 for materials and tax and $45 for labor and other operating expenses. Which would be a fair price to charge a customer--$85, $100, or $125?

3. In making an estimate, Willis thought that his materials and tax would be $500 and his operating expenses would be $400. He wanted a profit of 10%. How much should Willis bid for the job?

4. Call at least two air conditioning and heating repair services. Ask what their rates are for repair work. Report to the class what you found out.

5. Locate a manual that is used in making estimates on heating and air conditioning jobs. Ask your teacher for assistance. What kinds of information are contained in the manual?

Discussion Questions

1. Two contractors give these viewpoints on setting prices. Would you set your price high, low, or average? Why?
   - "I pay my employees well, and they do good work. I charge a higher price than most of my competitors, but our reliability and quality make it well worth the price."

- "My prices are among the lowest in the area. I make less profit on each job, but I attract more customers that way, and my total profit is high."

2. Suppose you want an air conditioning unit installed in your home. Company A makes a bid of $800. Company B makes a bid of $1,250 but will use a higher quality unit that is more efficient and reliable. As the home owner, would you accept A or B? Why?

3. Which of these jobs should Willis bid on? Rank them in order of their desirability.
   - A home owner wants a firm bid on a job of around $250.
   - A business requests a bid on a large job of around $15,000. Willis knows there will be lots of competition, and he has never done a job that big before.
   - A small restaurant wants an "add-on" worth around $3,000.

Group Activity

Choose students to take the position of a customer, an employee, and a heating and air conditioning service owner. Each student should discuss whether he or she prefers a fixed price for repair jobs or charging for materials and labor for time actually spent. For a large replacement job, which would each student prefer? Notice how preferences may change depending on the viewpoint of the student.

UNIT 7

Advertising and Selling

Goal: To help you learn ways to advertise and sell the services of an air conditioning and heating business.

Objective 1: Choose the best way to advertise your air conditioning and heating service for a specific purpose.

Objective 2: Design a printed ad for your air conditioning and heating service.

WILLIS ADVERTISES

One of the first things Willis did in planning his business was to prepare an ad for the Yellow Pages of the telephone book. He knew that when people needed repair work, one of the first things they would do would be to look in the telephone book. Willis planned ahead so his ad would appear in the telephone book when he was ready to start his business. The ad was more expensive than he expected--$75 a month. But he felt it was worth it since it would be his major form of advertisement.

Willis also had cards printed with his name and telephone number; he gave his card to people he knew and told them what he was doing. He found that his friends were a good source of business and referrals. Later he did some advertising in a small local newspaper. The ad didn't seem to bring in much repair work, but there was some response from people interested in remodeling and replacement jobs.

Willis found that a large part of his job was selling. He says, "I always thought of myself as a mechanic, not as a salesperson; but in this job I have to be good at both." He found that he had to be sensitive to the customer's needs and make suggestions to meet these needs. He also had to educate people about different ways to do jobs so that they could make a choice easily. Willis describes his approach this way: "I try to be friendly yet professional and to the point. I want my customers to feel that I understand their problem. But I don't confuse them with too much technical information. I emphasize comfort and economy."

After Willis was in business for a few years he found that much of his business came from referrals and repeat customers. He says, "I believe the secret of my success in business is satisfied customers. People recommend me to their friends because I do a good job."

Advertising and Selling

In order to use a service, customers need to know it is available. The purpose of advertising is to attract customers. How you deal with customers and provide services will determine whether they will "come back" and refer thir friends.

This section will discuss:

- customer needs;
- advertising and promotion; and
- selling and customer relations.

Customer Needs

To advertise your services, you should think about why people use air conditioning and heating. Homeowners want a heating and cooling system so they will be comfortable. Businesses want comfortable environments so workers will be productive and customers will want to come in. All customers want effective systems and reasonable prices. If your customer is another contractor, he or she will want someone who can carry out the plans, work well with others, and do good quality, reliable work.

Thinking about these customer needs, plan your advertising to project a certain image. Your image may stress low price, good service, or quality work. Different images will appeal to different customers and different needs.

Advertising and Promotion

There are many ways to advertise a business. What you decide to do depends on the service you provide and whom you want to reach. Advertising can be expensive, and you must decide how much you can afford to

spend. You will want to generate the most business at the least cost. That sounds easy, but it is difficult to do!

Below are a number of ways to attract customers and a brief description of how you can use each way in an air conditioning and heating business.

Yellow Pages of the telephone book. This is the major form of advertising for many air conditioning and heating services, particularly for getting repair work. The ad should include the business' name, telephone number, and other needed information. The cost varies, depending on the local area and the size of the ad. Many companies select a name starting with a letter that comes early in the alphabet so their listing will be among the first people will see.

Personal contacts. Business from friends and friends' friends can be a good source of new business. Give friends your printed business card with your name and telephone number. Ask them to "spread the word" about your business.

Contacts with contractors and other mechanics. For new construction, you will get your work from general contractors who subcontract part of the job. Therefore, you should try to stay in touch with a group of contractors. Call or visit them from time to time. Mechanics may also refer jobs to each other. For example, a mechanical contractor may refer a small job to you if he or she takes only large jobs or if the person already has enough work to do.

Truck. An attractively painted truck with the company name neatly painted on it can create a positive image for your business. Customers who see it will think of you when they want to have a job done.

Newspaper. The type of newspaper advertising you select will depend on your local area and the rates charged. A large-city newspaper ad will probably not be a cost-effective way to reach customers, but an appropriate ad in a smaller neighborhood or small town paper may generate a good

response at a reasonable price. People looking for a service will look in the classified section, where services are listed. A larger display ad in the paper may attract people, particularly for remodeling type work. Timing can be important for a display ad. For example, an air conditioning ad that appears during a heat wave may be very effective.

Other contacts. Sometimes an air conditioning and heating service will do a direct mailing or will call potential customers, such as people who have used its service in the past. You could also distribute attractive brochures describing your service. These types of advertising are usually aimed at getting replacement, remodeling, or maintenance work rather than repair work. A business owner should carefully consider the cost effectiveness of this type of advertising before doing it.

You will probably use a mix of these advertising approaches. When your business is new, you may do a lot of advertising to attract new customers. When your business is more established, you may depend more on referrals and repeat customers. You should ask customers how they heard of your business to find out which kind of advertising is working best.

Selling and Customer Relations

Once you have attracted a customer, you must "sell" him or her on using your service. These are ways to do this.

- How you treat your customers--Do you answer their questions? Do you give them the information they need?
- Your truck--Is it neat or messy?
- The appearance of your mechanics--Do they wear neat clothes or a uniform?
- The behavior of your mechanics--Are they confident, and do they do a good job? Are they courteous? Do they come when scheduled?
- The quality of the work--Is the work done to the customer's satisfaction?

Customers also form an impression about a business through written communications.

- The appearance of the bid--Is it well organized, specific, clearly written, and neatly typed?
- The work order and billing forms--Are they professional in appearance and easy to understand? Are they typed or neatly written?
- The business card--Is it attractively designed, and does it present the image you want?

Every contact the customer has with the business influences the impression the customer gets of che business. This begins with the initial telephone call and continues until the work is complete.

Summary

To have a successful air conditioning and heating service, you must attract customers and show that you can provide the service they want. How you plan your advertising depends on the service you provide, whom you want to reach, and how much you can spend. Customer referrals are also a very important way of getting business.

Learning Activities

Individual Activities

1. List five ways to advertise for an air conditioning and heating service.

2. Look at the ads in the Yellow Pages under "Air Conditioning" and "Heating." Are some companies listed in both places? Did they use the same or a different ad? Also look at the ads under "Sheet Metal Work" and "Refrigeration." Write down the name of a business that emphasizes each of these: emergency repair; installation; and commercial/industrial work.

3. List five pieces of information you find in most of the ads in the Yellow Pages. Which two are the most important?

4. Look in the classified section of a newspaper for listings under air conditioning, heating, or plumbing. Bring the listings you find to class. Indicate which ad you prefer.

5. Make up a name for an air conditioning and heating service that will create a certain image. Explain why you chose the name.

Discussion Questions

1. Give a good way to advertise each of these services: home repair work; new construction work; and home remodeling work.

2. Discuss the statement, "Our service people are our best salespeople."

3. Willis has the following choices for an ad in the Yellow Pages. He has a budget of $1,000 for the year for advertising. Which size Yellow Pages ad do you think he should buy? What other kind of advertising should he do, if any?
   - Short listing--$100/year
   - Medium-sized display ad--$500/year
   - Large display ad--$1,000/year

Group Activity

Prepare an ad for an air conditioning and heating service to appear in the Yellow Pages. Include the business' name, telephone number, and other information that you feel is appropriate and would appeal to your customers. Share your ad with the group and explain why you designed it as you did.

UNIT 8

Keeping Financial Records

Goal: To help you learn how to keep financial records for your air conditioning and heating service.

Objective 1: Fill out a customer account form for a customer.

Objective 2: Fill out a daily cash sheet for money received and paid out in one day.

WILLIS KEEPS TRACK OF FINANCES

Willis says, "The area I needed to learn the most about was bookkeeping. I never was interested in taking a class in it, but I really needed that skill. The first year I did my taxes, my records were a mess; it took me days to figure them out!"

Willis decided he needed to be more organized in keeping his financial records. His accountant helped him set up a system that was easy to use yet provided the information he needed. Willis learned how to use the system and checks his records often so he knows what his financial position is. He hired an office worker who does most of the actual bookkeeping.

Willis decided to get more training. He took a class through adult education. It was a self-paced, independent study class covering the basics of accounting and bookkeeping. He also signed up for a three-day special seminar on tax laws that was designed for small business owners. Willis says, "I've learned I can save a lot of money by knowing what the tax laws are."

Keeping careful records helps Willis in making decisions. He knows how much cash he has. He is also better able to predict how much money will be coming into the business and how much will be going out. For example, Willis found that some of his customers were taking two to three months to pay their bills. Because they were so late, he became short on cash to pay for salaries and other expenses. He decided to limit the customers he extended credit to and to have a clear penalty for late payment. He also makes better estimates of how much cash will be available.

Willis says, "Understanding financial records helps me make better decisions. I had to take time to study and learn how finances work, but it has paid off."

Keeping Financial Records

As a business owner, you must have a clear way to keep track of your money. Different businesses have different recordkeeping needs and methods. This unit will discuss the importance of keeping financial records and will give two examples of the types of records that might be kept.

Importance of Financial Records

Often people starting an air conditioning and heating service know their trade but don't know much about bookkeeping and accounting. Sometimes they run out of cash because they have not thought about what their revenues and expenses will be. You do not need to do all the bookkeeping for your business. However, you should understand the system and be able to use it to get the information you needed to plan and make decisions.

The main purposes for keeping financial records are:

- making business decisions and plans;
- keeping track of revenues (money coming in);
- keeping track of expenses (money going out);
- preparing taxes and other business reports required for government agencies;
- seeing what each job costs;
- comparing actual costs with estimates and bids;
- thinking ahead about cash shortages; and
- determining profits.

You have already learned about the work order, which shows the costs of a specific job. This unit discusses two other types of records--a customer account form and a daily cash sheet. Other records might include

payroll records, income tax records, and records grouped by type of expense. These records are periodically summarized and organized into a form that shows how the business is doing.

Customer Billing

Some air conditioning and heating services do the work and send a bill later. Others have the customer pay at the time the work is done, particularly for repair work and small jobs. For large jobs there is often an agreed-on progress billing schedule; in this case the customer pays certain percentages of the cost as the work is being done. In other cases, the customer may wait until he or she knows the system is in good working order before paying the bill.

If you extend credit to customers, you must wait for their payment. In this case, you should send out bills promptly to these customers to get them to pay as soon as possible. Meanwhile, you will need cash to pay workers and for other expenses. For large credit jobs, you will probably want to file a lien on the property, which gives you a claim to the property if the customer does not pay the bill.

A customer account form is kept in the office and shows how much a credit customer owes the business. Below is an example of a customer account form that you could use.

CUSTOMER ACCOUNT FORM

Customer: Tina Gonzalez

Date	Description of Work	Amount Charged	Payment Received	Balance Due
9/1	Repair Air Conditioner #1	40.00	40.00	-
9/12	Repair Air Conditioner #2	74.00	-	74.00
9/14	" " " #2	25.00	-	99.00
9/18	Payment Received	-	74.00	25.00

Daily Cash Sheet

A daily cash sheet such as the one below can be used to keep track of the money coming into and going out of a business each day. This form is only a sample; the system used will depend on your specific business.

DAILY CASH SHEET			
Cash Receipts		Cash Payments	
Cash Sales	$ 219.00	Salaries	$
Credit Sales	231.00	Building Expenses	
		Equipment and Furniture	
		Inventory or Supplies	372.00
		Advertising	75.00
		Other	53.00
TOTAL CASH RECEIPTS	$ 450.00	TOTAL CASH PAYMENTS	$ 500.00

These daily cash sheets are periodically summarized to determine how much cash you have on hand. You will also use daily records to prepare forms that show how your business is doing, such as a balance sheet and a profit/loss statement. You will learn about profit/loss statements in the next unit. If you do go into business for yourself, get the advice of a bookkeeper or accountant about how to complete a balance sheet.

Summary

Keeping careful financial records can be key to the success of a business. Often air conditioning and heating mechanics going into business for themselves must learn about how to keep and use financial records. The specific forms and system used should be designed to meet the needs of the particular business.

Learning Activities

Individual Activities

1. List four reasons for keeping careful financial records.

2. Complete a customer account form for Yen Chen using the information below.

Date	Description	Amount
1/15	Air Conditioning Maintenance	$50.00
2/5	Check received	$50.00
4/4	Air Conditioning Maintenance	$50.00
5/2	Adjust Air Conditioning System	$80.00

CUSTOMER ACCOUNT FORM

Customer: _____

Date	Description of Work	Amount Charged	Payment Received	Balance Due

3. Complete a daily cash sheet using the information below regarding the cash coming in and going out on a certain day.

Transaction	Amount
Advertising in Yellow Pages	$ 100.00
Insurance payment	85.00
Collection on credit sales	550.00
Salaries	1,500.00

DAILY CASH SHEET			
Cash Receipts		Cash Payments	
Cash Sales	$_____	Salaries	$_____
Credit Sales	_____	Building Expenses	_____
		Equipment and Furniture	_____
		Inventory or Supplies	_____
		Advertising	_____
		Other	_____
TOTAL CASH RECEIPTS	$_____	TOTAL CASH PAYMENTS	$_____

4. Explain the term "progress billing."

5. How could an adult in your local community get training in accounting or bookkeeping?

Discussion Questions

1. Do you think it's better for the owner of a small business to keep all the financial records or to hire someone else to do it? Discuss.

2. Give examples of when you would want a customer to pay in cash. Give examples of when you would extend credit.

3. Willis has a maintenance contract with a local restaurant. The restaurant now has a balance due of $175.00, which is overdue by two months. Willis sent a reminder notice after one month. What do you think Willis should do?

Group Activity

Make a list of the types of decisions Willis needs to make in his business in which it would be helpful to have information from financial records.

UNIT 9

Keeping Your Business Successful

Goal: To help you learn how to keep an air conditioning and heating service successful.

Objective 1: Figure out the net profit, profit ratio, and expense ratio for this business.

Objective 2: State one way this business could increase its profits.

Objective 3: State one way this business could change its services to increase sales.

WILLIS CHECKS HIS COMPANY'S HEALTH

Willis has been in business for five years now. For two of the years his employees earned more than he did, but in years four and five he drew a good income. His sales were higher in the fifth year than they had ever been before, but so were the expenses; Willis found his profit wasn't as good as it had been the year before.

Although Willis was doing well, he thought he could do better. He made a list of these alternatives.

Increase Sales--Perhaps he could do more work by hiring more mechanics or by being more efficient and getting more work done. This would spread operating expenses, such as the rent, over more sales.

Change Services--A growing field is retrofitting, or making existing homes and buildings more fuel efficient. Willis could emphasize doing energy audits and suggesting solar or other energy-saving approaches to heating and cooling.

Increase Prices--His prices had been the same for two years, but his expenses had gone up. He wanted to raise prices but was concerned that he might lose customers if he did.

Reduce Costs--Costs had been increasing; Willis didn't see any way actually to reduce costs, but he decided to keep them as low as possible. He also wanted to reduce waste.

Willis was confused. He said, "There are advantages and disadvantages to all my ideas. It's not clear at all what the best choice is." Willis arranged through the Small Business Administration for a consultant to discuss his business with him. Willis also decided he wanted to have a five-year plan for his company. This would help him make decisions that would help him reach his long-term goals.

Still, Willis feels very good about having his own business. He says, "It has been hard work, especially at first, but I've enjoyed it. I have so much more energy and more interest in my work now that I own my own business. I like feeling that I've created something and that I'm rewarded for my efforts."

Keeping Your Business Successful

A business must make a profit to continue, and profit is one way to evaluate the success of a business. However, there are other personal satisfactions for some people in running their own businesses. This section discusses personal satisfaction, using a profit/loss statement, and ways to increase profits.

Profit and Personal Satisfaction

Many people start a small business hoping to make more money than they would working for someone else. They take a risk by going on their own. Some people make much more money, some make about the same, and others make less than what they could make working for someone else. (Some may even lose considerable amounts of money!) Different people are satisfied making different amounts of money from their businesses. Personal satisfaction may be more important than profit to some business owners.

Besides profit, there are other factors affecting a person's satisfaction in being a small business owner. Some people like working for themselves. They may enjoy the independence, the challenge, and the chance to make business decisions. They are usually persistent, hard-working, and motivated. Some people don't like being a small business owner, even when their business is profitable. They may not like the stress, worries, responsibility, or the long hours. Operating a small business is certainly not right for everyone.

Profit/Loss Statement

A profit/loss statement shows revenues, cost of goods sold, gross profit, expenses, and net profit during a certain period of time. This

information can be helpful in determining how a business is doing and in deciding what changes might be made.

A profit ratio and an expense ratio can be computed from the information on the profit/loss statement. They show the percentage of profit and expenses to sales and are useful in comparing the performance of a business from year to year. They are computed as follows:

$$\text{Profit Ratio} = \frac{\text{Net Profit}}{\text{Revenues}}$$

$$\text{Expense Ratio} = \frac{\text{Expenses}}{\text{Revenues}}$$

Following is Willis Jones' profit/loss statement for years four and five.

PROFIT/LOSS STATEMENT

	Year 4		Year 5	
Revenues	$235,000	100%	$250,000	100%
Cost of Goods Sold	117,500	50%	125,000	50%
Gross Profit	$117,500		$125,000	
Expenses				
Salaries	$ 60,500		$ 66,300	
Rent & Utilities	10,000		10,500	
Equipment Repairs & Depreciation	2,000		2,500	
Gasoline	1,800		2,200	
Office Supplies	600		700	
Advertising	1,000		1,200	
Other	4,000		4,100	
	$ 79,900	34%	$ 87,500	35%
Net Profit (before salary & income taxes)	$ 37,600	16%	$ 37,500	15%

Often businesses do not include the owner's salary in the net profit. Then their reported profit as a percentage of sales is much lower than what is shown in this example.

In analyzing the profit/loss statement, you can see that Willis had more revenues in year 5, but he also had more expenses. In fact, his expenses increased more rapidly than his revenues. Therefore his net profit and profit ratio were lower.

	Year 4	Year 5
Expense Ratio	34%	35%
Profit Ratio	16%	15%

How to Increase Profits

A business owner can increase profits by increasing the amount of money coming in and decreasing expenses. It sounds easy, but it is often difficult to do!

Some ways to increase revenues include:

- raising prices;
- getting more customers;
- working more efficiently and getting more work done;
- providing different services; and
- specializing in the more profitable services.

Some ways to decrease expenses include:

- having a smaller inventory of parts and materials;
- reducing waste; and
- paying a lower rent.

Sometimes it is difficult to reduce expenses much without also reducing the quality of services provided, which may lead to a loss of customers. Sometimes a business will change services to adjust to changes in demand. For example, a company that does construction work may emphasize

remodeling when new building work is slow. A trend for the future in air conditioning and heating is retrofitting existing buildings to make them more fuel efficient. Solar energy devices are becoming more practical, and other products such as automatic thermostats are being developed and refined. Willis is considering doing more of this kind of work.

Summary

A company must make a profit to stay in business. A profit/loss statement shows the owner how much profit there is and can be used to decide on areas where improvements can be made. Personal satisfaction, as well as profit, is important to the small business owner.

Learning Activities

Individual Activities

1. Give the equation for an expense ratio and a profit ratio and explain why they are useful.

2. In year six Willis Jones had revenues of $300,000 and expenses of $105,000. His cost of goods sold was $150,000. What was the net profit, the expense ratio, and the profit ratio? Did Willis do better or worse than in years four and five?

3. List five reasons why revenues for an air conditioning and heating business might go down.

4. List five ways to increase revenues.

5. List five ways to reduce costs.

Discussion Questions

1. The mechanics who work for Willis earn about $30,000 a year. Which of these amounts do you think Willis should earn, and why?
   ___ a. $25,000
   ___ b. $30,000
   ___ c. $40,000
   ___ d. Over $40,000

2. Which of these types of work would you like to do if you were a small business owner, and why?

___ a. New construction

___ b. Remodeling

___ c. Repair

___ d. Commercial

___ e. Residential

3. What personal satisfaction may <u>you</u> get from having your own business?

<u>Group Activity</u>

Read over the case study about the changes Willis was considering in his business. List at least one <u>other</u> alternative Willis could consider. Then decide on two things Willis should actually put into practice to improve his business.

SUMMARY

This module has been about owning a small air conditioning and heating service. There are also large companies with many employees that do large commercial construction, residential tract housing, and other large jobs. They may offer a range of services. Such companies sometimes started small and expanded.

Starting your own air conditioning and heating service can be a rewarding challenge. Many people like working for themselves and being their own boss. They also like the fact that their efforts will be rewarded financially. They get both personal satisfaction and the possibility of more income by running their own business.

In order to own and operate a successful air conditioning and heating service, you need training in air conditioning and heating, work experience, and the special business management skills we have covered in this module. If you have not had a course in air conditioning and heating, you should take one before deciding to own this type of business. You can learn business management skills through business classes, experience, or by using the advice and example of an expert.

You may not make a lot of money by owning an air conditioning and heating service. However, you would have the personal satisfaction of being responsible for your business and making your own decisions. Think about how important these things are to you in considering whether you should start your own air conditioning and heating service.

QUIZ

1. The least likely customer of a small air conditioning and heating service is:
   ___ a. a home owner.
   ___ b. an apartment building owner.
   ___ c. an owner of a gift shop.
   ___ d. the manager of a large factory.

2. The least important personal quality of a small air conditioning and heating service owner is:
   ___ a. enjoying being alone.
   ___ b. liking to solve problems.
   ___ c. being interested in business.
   ___ d. being organized.

3. Which of these methods was given in this module as a way to have a successful business?
   ___ a. Do not borrow money
   ___ b. Provide a wide variety of services
   ___ c. Hire only people who are friends
   ___ d. Plan carefully before starting your business

4. The legal requirements for operating a small air conditioning and heating service may include:
   ___ a. passing a state test.
   ___ b. having a business license.
   ___ c. having a certain number of years of experience.
   ___ d. all of the above.

5. List two things to think about in deciding in what area to locate your business.

a. _____

b. _____

6. Which location seems best for an air conditioning and heating service office?

___ a. A home

___ b. A place where many people walk by

___ c. Space in an industrial area

___ d. Space in an office building

7. List three kinds of information you must give the bank when applying for a business loan.

a. _____

b. _____

c. _____

8. Casey Harris plans on starting a small air conditioning repair center. She has $3,000 she can spend. She estimates that her expenses will be $5,000. Fill out the form below using this information.

Total Starting Expenses _____

Total Money on Hand _____

Total Loan Money Needed _____

9. Which of these people would be most likely to make a decision about hiring a new employee?

___ a. The owner

___ b. The supervisor on a job

___ c. A journeyman mechanic

___ d. An office worker

10. What kind of experience would you look for in a person you want to hire as an air conditioning and heating foreman for a new construction job?

___ a. Seven years of experience in plumbing, ten years' experience as plumbing foreman

___ b. Seven years of experience in air conditioning and heating repair work, some experience as foreman

___ c. Five years of experience in air conditioning and heating for new construction, some experience as foreman

11. List three ways to keep your employees satisfied.

a. _____

b. _____

c. _____

12. Fred Harris repaired an air conditioning unit. The work took $54.00 in parts and two hours of labor at $36.00 per hour. Fill out the form below using this information.

WORK ORDER

Person Doing Work	Description of Work	Materials	Labor

Total Materials _____

Total Labor _____

Tax (6%) _____

Total Cost _____

13. Which of these jobs would you schedule first on a given day?

___ a. A maintenance contract job

___ b. Installation of a window air conditioning unit

___ c. An emergency call from a major customer

___ d. A request for an estimate on a remodeling job

14. A job will cost $200 for materials and tax and $250 for labor and other expenses. The contractor wants to make a 10% profit. How much should he or she bid the job at?

___ a. $450

___ b. $500

___ c. $550

15. Which of these would be the best way for a business doing emergency air conditioning and heating repair work to advertise?

___ a. Business cards

___ b. Newspaper

___ c. Radio

___ d. Yellow Pages in the phone book

16. List the two most important things to include in an ad.

a. _____

b. _____

17. Molly McPherson had her furnace replaced for $800. She has paid $680. What would be the balance due on her customer account form?

_____

18. Micheletti's Air Conditioning and Heating Company had the following cash receipts and cash payments in one day: cash sales of $521.00; purchase of materials for $700; and collection on credit sales of $129.00. What were the total cash receipts and total cash payments for the day?

Total Cash Receipts _____

Total Cash Payments _____

19. In one year a business has $100,000 in revenues and $30,000 in expenses. Cost of materials and parts was $50,000. Fill in the blanks.

a. Profit = _____

b. Profit Ratio = _____

c. Expense Ratio = _____

20. List the two main things a business can do to increase profits.

a. _____

b. _____

21. List two things an air conditioning and heating service can do to increase sales.

a. _____

b. _____

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PROJECT PRODUCTS

Entrepreneurship Training Components

Vocational Discipline	Module Number and Title
General	Module 1 - Getting Down to Business: What's It All About?
Agriculture	Module 2 - Farm Equipment Repair
	Module 3 - Tree Service
	Module 4 - Garden Center
	Module 5 - Fertilizer and Pesticide Service
	Module 6 - Dairy Farming
Marketing and Distribution	Module 7 - Apparel Store
	Module 8 - Specialty Food Store
	Module 9 - Travel Agency
	Module 10 - Bicycle Store
	Module 11 - Flower and Plant Store
	Module 12 - Business and Personal Service
	Module 13 - Innkeeping
Health	Module 14 - Nursing Service
	Module 15 - Wheelchair Transportation Service
	Module 16 - Health Spa
Business and Office	Module 17 - Answering Service
	Module 18 - Secretarial Service
	Module 19 - Bookkeeping Service
	Module 20 - Software Design Company
	Module 21 - Word Processing Service
Occupational Home Economics	Module 22 - Restaurant Business
	Module 23 - Day Care Center
	Module 24 - Housecleaning Service
	Module 25 - Sewing Service
	Module 26 - Home Attendant Service
Technical	Module 27 - Guard Service
	Module 28 - Pest Control Service
	Module 29 - Energy Specialist Service
Trades and Industry	Module 30 - Hair Styling Shop
	Module 31 - Auto Repair Shop
	Module 32 - Welding Business
	Module 33 - Construction Electrician Business
	Module 34 - Carpentry Business
	Module 35 - Plumbing Business
	Module 36 - Air Conditioning and Heating Service

Related Resources

Resource Guide of Existing Entrepreneurship Materials

Handbook on Utilization of the Entrepreneurship Training Components